



WaterSense® Flushometer-Valve Toilet NOI Public Meeting Summary

September 12, 2013, 1:00 to 3:00 p.m. Eastern, Webinar

Meeting Participants

Ted Andree, St. Mark Lutheran Church/Schools
Gunnar Baldwin, TOTO USA, Inc.
Keith Bancroft, Marin Municipal Water District
Daniel Bartz, Kohler Co.
Jim Bauman, Mansfield Plumbing Products, LLC
Ken Beauregard, Progress Software Corporation
John Bertrand, Moen Inc.
Veronica Blette, U.S. Environmental Protection Agency (EPA)
Alys Brockway, Hernando County (Florida) Utilities Department
Maribel Campos, International Code Council – Evaluation Service (ICC-ES) Plumbing,
Mechanical and Fuel Gas (PMG)
Steve Carper, Tualatin Valley (Oregon) Water District
Bob Carter, Zurn Industries Inc.
Chad Cochart
Dan Cole, International Association of Plumbing and Mechanical Officials (IAPMO)
Shirley Dewi, IAPMO Research & Testing (R&T)
Rebecca Duff, ICF International
Tom Eberhardy, Bradley Corporation
Kevin Ernst, Oakville Stamping & Bending (OS&B)
Fernando Fernandez, TOTO USA, Inc.
Erin Flannery, EPA
Rene Fleming, City of St. George (Utah) Water Services Department
Bill Gauley, Gauley Associates Ltd.
Daniel Gleiberman, Sloan Valve Co.
Hope Hamilton, Jones Lang LaSalle
Dain Hansen, IAPMO R&T
Kristine Heine, Global Communicators, LLC
Vincent Iacovelli, Kason Industries
Peter Jahrling, Sloan Valve Co.
Maja Jankov, Duravit USA, Inc.
Ronn Jefferson, Geberit
Kevin Kennedy, Niagara Conservation Corp.
John Koeller, Koeller and Company
Thomas Kramer, Kohler Co.
C.J. Lagan, American Standard
Deb Lane, City of Santa Rosa (California)
Chase Lyles, Vi-Jon
Donnie Lyons, Fox Energy Specialists
Mark Malatesta, American Standard



Gary Mauss, HydraMetrics
Cary McElhinney, EPA
Akshay Mishra, American National Standards Institute (ANSI)
Joseph Montemurno, Florida Solar Energy Center at the University of Central Florida (UCF)
Chris Moran, Municipal Water Treatment Plant, Town of Jackson, Wyoming
Mariana Nicolae, Sloan Valve Co.
Pierre Pare, Masco Canada Ltd.
Robert Pickering, Eastern Research Group, Inc. (ERG)
Shabbir Rawalpindiwala, Kohler Co.
Becca Richards, Moen, Inc.
Christopher Salazar, NSF International
Stephanie Salmon, Plumbing Manufacturers International (PMI)
Frederick Schilling, World Plumbing Council
Earl Schumacher, Northwestern Mutual
Syed Shahriyar, EPA Region 6
Christie Shields, NSF International
Roy Sieber, ERG
George Sullivan, Eco Smart Building, LLC
Len Swatkowski, PMI
Stephanie Tanner, EPA
Susan Tensfeldt, San Francisco (California) Public Utilities Commission
Kim Wagoner, ERG
Kirsten Whetstone, Park City (Utah) Municipal Corporation
Brandon Young, Young Enterprise Solutions, LLC

Meeting Summary

Stephanie Tanner (EPA's WaterSense program) welcomed everyone to the meeting and reviewed the meeting agenda. Agenda items included an introduction to WaterSense; background information about flushometer-valve toilets; and a review of the *WaterSense Notice of Intent (NOI) to Develop a Specification for Flushometer-Valve Toilets*. The PowerPoint slides from this presentation can be reviewed on the WaterSense website at: [://www.epa.gov/watersense/products/flushometer-valve-toilets.html](http://www.epa.gov/watersense/products/flushometer-valve-toilets.html). The presentation discussion and participant questions and comments are summarized below.

1. Introduction and Flushometer-Valve Toilet Background

Ms. Tanner provided an overview of the WaterSense program and shared background information on flushometer-valve toilets. WaterSense is a voluntary program that labels water-efficient, high-performing products. WaterSense labeled products must perform as well or better than standard products in the same category; be 20 percent more water-efficient; realize savings on a national level; ensure water efficiency is achieved through many technological options; and be independently certified.

Flushometer-valve toilets are tankless toilets comprised of a wall- or floor-mounted bowl attached to a valve. These toilets can be operated a number of ways and are generally found in commercial, industrial, and other public restrooms. The Energy Policy Act (EPAct) of 1992 set a maximum flush volume of 1.6 gallons per flush (gpf) or 6.0 liters per flush (Lpf) for flushometer-valve toilets. However, older toilets can use between 3.0 and 7.0 gpf. High-efficiency flushometer-valve toilets use 1.28 gpf or 4.8 Lpf. Estimates suggest that there are currently 26 million flushometer-valve toilets installed in the United States. Labeling flushometer-valve toilets could yield an estimated annual savings of 56 billion gallons of water.

2. Expected Scope of Draft Specification

Robert Pickering (ERG, contractor to EPA's WaterSense program) discussed EPA's intent to develop a specification for flushometer-valve toilets. Because both the toilet valve and bowl are integral to assuring water efficiency and effectiveness, the specification will apply to both components. The specification will include dual-flush toilets and will exclude retrofit devices.

WaterSense is considering setting a maximum rated flush volume of 1.28 gpf for flushometer-valve toilets. This meets the WaterSense goal of a 20-percent reduction over the federal maximum efficiency requirement. This criterion also meets the currently accepted industry standard for high-efficiency toilet fixtures, and is consistent with the existing [Specification for Tank-Type Toilets](#).

More than 250 flushometer-valve toilets have been tested at this volume (1.28 gpf) through the Maximum Performance (MaP) testing protocol, a voluntary program for both residential and commercial toilets. In addition, WaterSense is confident moving forward with a 1.28 maximum rated flush volume because of a Plumbing Efficiency Research Coalition (PERC) study published in November 2012. This study investigated the transport of waste through drain lines and found that media was successfully cleared for all 1.28 gpf test runs.

WaterSense is also considering setting the maximum flush volume for dual-flush toilets at 1.28 gpf. Doing so would ensure a 20-percent water savings for these types of toilets. Due to a lack of documentation, it is unclear at this time whether dual-flush toilets with a full flush of 1.6 gpf achieve EPA's water savings goal, since savings from these toilets are dependent upon user behavior. Furthermore, water savings from dual-flush toilets are limited to women's restrooms in commercial settings, as urinals are typically used for liquid wastes in men's restrooms.

Pierre Pare (Masco Canada Ltd.) asked if dual-flush toilets are mandatory or optional. Ms. Tanner explained that dual-flush toilets are optional; manufacturers will not have to make dual-flush flushometer-valve toilets to obtain the WaterSense label.

Mr. Pare asked for an explanation of WaterSense's definition of a retrofit device. Ms. Tanner explained that a retrofit device is anything added after market which is not included when a product is initially certified.

Fernando Fernandez (TOTO USA, Inc.) asked if there is an estimate for the number of flushometer-valve toilets in the U.S. market that use 3.5 gallons of water per flush. Ms. Tanner explained that there are approximately 8 million flushometer-valve toilets in the United States that use between 3.0 and 7.0 gpf.

Mr. Pickering reiterated that the PERC study previously referenced has two phases, of which only the first phase has been conducted. Nevertheless, WaterSense feels confident moving forward with a maximum flush volume of 1.28 gpf based on the results of Phase 1 of the PERC study.

Len Swatkowski (Plumbing Manufacturers International) asked why dual-flush technology is being compromised for the program, noting the NOI states that research shows dual-flush ratios to vary. Mr. Swatkowski expressed concern that if WaterSense sets the maximum flush volume at 1.28 gpf for dual-flush toilets, the minimum might be below a flush volume that is considered functional for commercial buildings. Mr. Swatkowski would like to see the flush ratio remain the same and instead a greater investment be made in consumer education. In response, Mr. Pickering noted a University of Missouri study, in which only 12-percent water savings were achieved as a result of user education (e.g., stall plaques). Mr. Pickering added it is therefore difficult to conclude that typical dual-flush toilets flushing at 1.6 gpf for a full flush and 1.1 gpf for a reduced flush will meet WaterSense's intent of saving 20 percent more water than standard models. Mr. Swatkowski explained that the University of Missouri study was performed by a graduate student on eight toilets, and he feels more research is needed to reach a determination about the technology's viability in commercial settings. He feels that the technology has a lot of potential to save water and he thinks it would be premature to dismiss it. Ms. Tanner explained that WaterSense is concerned because there's a lot of variability in how people use this technology, and WaterSense would like to eliminate the variability that comes from user behavior. Ms. Tanner explained that the majority of savings in a commercial environment come from women's bathrooms and women do not normally use the upward flush direction of the flush valve, which is most often associated with the reduced flush. Ms. Tanner explained that in a residential setting, users are likely to pay closer attention to what they're doing, while public-restroom user behavior is more variable. WaterSense is open to data and

studies on the flush ratio for flushometer-valve toilets so that it can thoroughly determine if there's a problem, where it lies, and if we can rectify it through the specification.

Jim Bauman (Mansfield Plumbing Products, LLC) asked if there would be a minimum flush volume for dual-flush, flushometer-valve toilets. Ms. Tanner explained that there would not be a minimum flush volume.

Shabbir Rawalpindiwala (Kohler Co.) commented that PERC states that one has to be careful as to where 1.28-gpf flushometer-valve toilets are installed in commercial settings. Ms. Tanner explained that the PERC study does state that there may be drainage problems in older buildings, so facility managers should inspect the drain line before installing a 1.28-gpf toilet.

Fernando Fernandez (TOTO USA, Inc.) asked if utilities have commented on potential drainline carry issues of 1.28 gpf flushometer-valve toilets in commercial settings. Ms. Tanner explained that WaterSense has not heard from utilities about this issue but welcomes feedback from those on the call.

John Bertrand (Moen, Inc.) commented that a 1.6-gpf full flush/1.1-gpf reduced-flush, dual-flush toilet might work for a commercial facility, whereas a 1.28 gpf toilet might not.

Brandon Young (Young Enterprise Solutions, LLC) commented that since behavior is an issue that needs to be influenced, perhaps a study should focus on creating flush-valve activators that adapt this behavior.

Deborah Lane (City of Santa Rosa [California]) said her organization's rebate program customers have installed 1.28-gpf toilets and experienced drainline issues. She's found clogs result if the drainlines aren't flushed out completely, posing a challenge when moving to lower flow rates. Ms. Tanner asked if Ms. Lane could provide WaterSense with more information about these facilities. Ms. Lane explained that she will be visiting the facilities with an installation and integration (I&I) specialist to look at their drainline carry potential, adding that she sees old infrastructure as a major challenge to introducing high-efficiency products to the commercial and industrial sector. Ms. Lane will keep WaterSense apprised of their findings.

Becca Richards (Moen, Inc.) wanted to confirm if retrofits qualify for WaterSense. Ms. Tanner explained that retrofit products are not eligible for the WaterSense label.

Brandon Young (Young Enterprise Solutions, LLC) asked if any consideration had been given to the solid waste savings from retrofits versus changing entire units when looking at replacements on a national scale. Ms. Tanner explained that WaterSense did some analysis with residential toilets but has not done the complete analysis with commercial toilets. Ms. Tanner clarified that the problem with retrofit devices is that WaterSense requires products that receive the WaterSense label to both save water and perform well. Since retrofit devices don't comprise an entire device (and don't meet that requirement), it is not possible to certify their performance.

Daniel Gleiberman (Sloan Valve Co.) asked why WaterSense chose to eliminate the 1.6/1.1-gpf ratio as opposed to maintaining the same ratio outlined in the tank-type toilet specification.

Ms. Tanner explained the pillar of WaterSense program is to achieve a water savings of 20 percent, and if studies say commercial toilets do not meet this benchmark, the WaterSense program does not feel comfortable labeling those products. Ms. Tanner noted that WaterSense is currently in the NOI phase of the specification development process, so this is a time for interested parties to air their questions and concerns and submit data for consideration.

3. Performance Considerations

Mr. Pickering explained that the general performance requirements to be included in the draft specification are the same as those federally mandated. Similar to what is included in the existing WaterSense specification for flushing urinals, WaterSense intends to include a requirement that the flushometer valve must not exceed the rated flush volume of water even if the primary actuator is maintained. This would require the valve being designed in a non-hold open fashion, consistent with the [Specification for Flushing Urinals](#).

WaterSense also wants to consider limiting flush-volume adjustability, consistent with the *WaterSense Specification for Flushing Urinals*. Manufacturers may not provide instructions directing users how to adjust the flush valve such that the flush volume could be changed or over-ridden.

WaterSense is considering additional requirements related to adjustability. At this time, there are products on the market that have an integrated adjustability that can assist with the maintenance and operation of toilets and plumbing systems. These include remote sensors that can electronically alter the flush volume and products that allow a clearing flush at a higher flush volume. WaterSense is aware that these products can help maintain plumbing systems. However, they can also be marketed and used in a way that can permanently increase the flush volume of products.

WaterSense is seeking input about how to balance the benefits of adjustability for facility maintenance with the importance of ensuring the long-term water savings of WaterSense labeled products. Specifically, WaterSense announced it is seeking input on the following questions:

- How should WaterSense specify the adjustability tolerance—should it be a set volume like the urinals of +/- 0.1 or a percentage of rated flush volume?
- Should products with built-in adjustability be able to earn the WaterSense label? If so, how can WaterSense ensure water savings?

Peter Jahrling (Sloan Valve Co.) is worried that WaterSense's concern with water savings overlooks the quality of commercial restrooms. He explained that with commercial systems, many times the plumbing infrastructure is variable and can affect bowl performance. Ms. Tanner said that while WaterSense's main purpose is to save water, WaterSense uses the performance component of the specification to consider the quality of users' experiences. She explained that if stakeholders have information about performance or how flushometer-valve toilets interact with commercial plumbing systems, WaterSense would be interested in reviewing it.

C.J. Lagan (American Standard) asked why the specification would consider outlawing remote controls when an angle stop on a flushometer can change water consumption just as a remote control can. Ms. Tanner explained that the prohibition would not be limited to remote controls but would include any kind of integrated ability to adjust the flush volume. WaterSense would like to maintain those types of adjustability that are meant to maintain products and plumbing systems but also wants to ensure products are delivering savings.

Fernando Fernandez (TOTO USA, Inc.) commented that the adjustability for urinals is based on 20 percent of the 0.5 gpf volume, which yields a +/- 0.1 gpf tolerance. However, in toilets, Mr. Fernandez believes performance is more critical due to the flushing of solids over a range of pressures (20 to 80 psi). He believes the specification should consider a 15-percent tolerance, which would allow +/- 0.2 gpf.

Bob Carter (Zurn Industries Inc.) asked why there would be a tolerance in the specification related to flush volume. He thinks it would be simpler to set a maximum of 1.28 gpf, period. Ms. Tanner explained that the standard would state a maximum of 1.28 gpf and that the adjustability is currently up for discussion.

Brandon Young (Young Enterprise Solutions, LLC) asked why residential users who want to save water should have to replace an entire unit when an adjustable device will allow them to save water and reduce the impact to their local landfill. Ms. Tanner explained that there is nothing in WaterSense that prevents a residential user from retrofitting a toilet as they see fit. However, WaterSense only labels the entire device, not retrofit products.

4. Parts Interchangeability

Mr. Pickering explained that WaterSense is considering requiring manufacturers to test that the flushometer valve does not contain interchangeable parts that would allow the maximum flush volume to be exceeded. WaterSense is also considering requiring the rated flush volume to be marked on the body of the flushometer valve to assist facilities managers in identifying acceptable replacement parts. Additionally, manufacturers would not be permitted to provide instructions or advertise any replacement parts that would override flush volume limitations.

WaterSense announced it is seeking input on the following questions:

- Is the proposed requirement for manufacturers to test the non-interchangeability of parts sufficient to address these concerns and ensure the long-term water savings associated with these products?
- Are there any questions or comments on the requirement to mark the rated flush volume on the body of the flushometer valve?

Len Swatkowski (Plumbing Manufacturers International) commented that the interchangeability aspect of the draft specification should be the same as the WaterSense urinal specification.

5. Cased Versus Uncased Media

Mr. Pickering clarified that WaterSense intends to use uncased media in performance testing. This is consistent with the existing specification for tank-type toilets. Mr. Pickering explained that cased media has been included in the ASME standard, but WaterSense feels that uncased media provides a more accurate representation of human waste and should therefore be used in testing. Mr. Pickering asked for questions, but there were none at that time.

6. Additional Performance Requirements

Mr. Pickering explained that because WaterSense is aware that public toilets encounter harsher conditions in the field, WaterSense is considering adding additional test requirements. Additional media being considered include additional soy bean paste, additional toilet paper, seat covers, paper towels, flushable wipes, and sanitary napkins. WaterSense is open to feedback about whether non-flushable waste (e.g., paper towels, flushable wipes) should be used.

Shabbir Rawalpindiwala (Kohler Co.) commented that during a meeting in Phoenix two years ago, industry addressed the problem of clogging, and no one provided a justification for using additional media in testing.

Len Swatkowski (Plumbing Manufacturers International) commented that the current testing requirements in the ASME A112.19.2-2013/B45.1-13 standard are the benchmark for performance of all water closets and need not be changed. Mr. Swatkowski feels that WaterSense specifications should only refer to consensus American National Standards and not create unique test requirements that may conflict with current American National Standards.

Fernando Fernandez (TOTO USA, Inc.) commented that WaterSense and industry should have a realistic view of what a commercial toilet can and can't do despite the fact there is an abuse factor.

7. Certification, Labeling and Testing

Mr. Pickering explained that WaterSense is considering certifying and labeling flushometer valves and toilet bowls separately. This is consistent with certification and labeling for flushing urinals. Further, toilet valves and bowls are often marketed and sold separately. Labeling both valves and bowls would make it easier for facility managers to identify labeled components.

WaterSense announced it is seeking input on which of the following testing options should be pursued:

1. Should products be tested with the applicable standard? Under ASME, bowls are tested with one representative valve, while under ASSE, valves are tested with three representative bowls

2. Should both valves and bowls to be tested with representative counterparts from three manufacturers (e.g., what ASSE currently requires for valves)?
3. Should bowls and valves be tested independently? This option would involve identifying the minimum flush curve for acceptable performance and then comparing the curve from valves to the minimum flush curve

WaterSense also asked for input on how many product samples of the fixture model and flushometer valve should be submitted for random sampling. Submission of three samples would be consistent with the *WaterSense Specification for Flushing Urinals*, and would require the certifying body to choose at least one sample at random for testing.

Fernando Fernandez (TOTO USA, Inc.) asked for clarification about whether testing would be done separately and as a combination, or separately only. He believes that the combination option should be maintained. Kim Wagoner (ERG) explained that WaterSense was envisioning that testing would work as it does for urinals. The valve and bowl could be tested separately, or if there is a specific combination, it could be tested and marketed as a combination.

Len Swatkowski (Plumbing Manufacturers International) commented that the WaterSense specification for flushometer-valve toilets should refer to the current ASME A112.19.2-2013/B45.1-13 and soon-to-be-released, tri-harmonized ASSE 1037 standard to assure products meet the necessary performance and efficiency requirements. He feels that WaterSense certification should be allowed for the flushometer valve, water closet bowl, or combinations of valve and bowls. Furthermore, Mr. Swatkowski believes the number of valves tested should be consistent with the soon-to-be-released, tri-harmonized ASSE 1037 standard, and the number of bowls tested should be consistent with the ASME A112.19.2-2013/B45.1-13 standard.

Peter Jahrling (Sloan Valve Co.) would like to know who will determine the minimum flush curve (referring to the Option 3 presented above), as there are many curves, and they are dependent upon the manufacturer and technology. He is in favor of keeping the established industry tests described in Option 1.

C.J. Lagan (American Standard) commented that providing three samples seems unnecessary.

8. Marking and Product Documentation

Mr. Pickering explained that WaterSense is considering requiring manufacturers to mark bowls to indicate compatibility with a range of flush volumes. As long as the 1.28 gallon flush volume falls within the range indicated on the bowl, the product would be eligible for the WaterSense label.

Recent revisions to the ASME 19.2 standard allow three options for showing multiple flush volume compatibility:

1. Include the listing of the maximum rating flush volume and the words “or less.”

2. Include a dual-consumption marking, meaning they can mark the product with “1.28 gpf” or “1.6 gpf.”
3. Identify a consumption range (e.g., 1.1 to 1.6 gpf).

WaterSense is also considering requiring the rated flush volume of the flushometer valve to be marked on the body of the valve.

WaterSense announced it is seeking input on the following questions:

- Should WaterSense allow bowls to be marked in a way that indicates compatibility with a range of flush volumes? (This would be consistent with ASME standard).
- Is ensuring that the flush volume compatibility range clearly includes the rated flush volume sufficiently?

Len Swatkowski (Plumbing Manufacturers International) commented that the issue of markings for flushometer-valve toilet bowls is the already covered by the WaterSense tank-type water closet program and should be identical.

Mariana Nicolae (Sloan Valve Co.) commented that if a bowl is marked with a range of 1.1 to 1.6 gpf, it will create confusion. Ms. Tanner explained that bowl manufacturers often have one model that can be used with a variety of valves with different flush volumes. Ms. Tanner explained that WaterSense is trying to be considerate of how products are manufactured, which is why WaterSense has tried to require markings on flushometer valves.

Len Swatkowski (Plumbing Manufacturers International) asked if the marking requirements for flushometer valves will be consistent with the soon-to-be-released, tri-harmonized ASSE 1037 standard. Mr. Pickering explained that WaterSense is not yet familiar with these revisions and asked for confirmation if the revisions will include exterior marking of the valve. Mr. Swatkowski said he believes the standard will require this marking. He will send a copy of the standard for WaterSense’s review.

9. Other Issues

Len Swatkowski (Plumbing Manufacturers International) commented that there is a statement in the NOI document on page 1 that notes: “Even when various bowls and valves are mixed and matched, the performance of many flushometer-valve toilet combinations meet and often exceed the performance of residential toilets.” Mr. Swatkowski believes this comment is not accurate since water pressure variations throughout the United States determine the performance of flushometer-valve-type products, and flushometer-valve toilets might not actually perform as well as tank-type toilets. Mr. Swatkowski believes this comment should be deleted from the NOI.

Daniel Gleiberman (Sloan Valve Co.) would like to know why there's a distinction between residential and commercial toilets with regard to dual-flush ratios. Specifically, why would the draft specification for flushometer-valve toilets remove the 1.6/1.1 ratio when multiple manufacturers are currently making these types of products for the commercial marketplace, and the current tank-type toilet specification uses this guidance? Ms. Tanner explained that the tank-type toilet specification has been out for almost seven years, and both the market and technology have changed in this time. In creating a specification for commercial toilets, WaterSense wants to consider everything that has entered the marketplace over the last several years. Ms. Tanner also noted that the goal is to eliminate the variable of human behavior and assure water savings.

Mr. Gleiberman asked if the intent for the specification was to apply not only to new construction, but to all WaterSense labeled toilets. Ms. Tanner confirmed that the specification would apply to both new construction and existing facilities. Mr. Gleiberman commented that a lot of the water savings are predicated on installing WaterSense labeled commercial toilets in existing buildings where drainline carry might be a problem.

Mr. Gleiberman stated that WaterSense must consider whether the specification can cover many potential issues. A lot of the water savings that the specification relies upon would be in existing facilities where current plumbing systems would need to be upgraded. Mr. Gleiberman encouraged everyone to keep in mind that the specification would not only apply to new construction, but also to existing facilities where drainline carry might be an issue.

John Koeller and Bill Gauley (Gauley Associates, Ltd.) commented that in a parallel with WaterSense, MaP is looking at a premium category for commercial toilets including flushometer-valve and tank-type toilets that meet more rigorous performance requirements. MaP is developing a protocol for commercial toilets. It will not be including flushable wipes as additional flushable media. Rather, it will include additional toilet paper, one to two seat covers, and additional soy bean paste in place of wipes for testing. Ms. Tanner explained that she is happy to hear what MaP is doing and learn more about the process, but she clarified that the two processes are not integrated.

Fernando Fernandez (TOTO USA, Inc.) asked when stakeholders could provide input on the specific test protocol. Ms. Tanner explained that stakeholders can provide input at any point. She explained that WaterSense will take a few months to develop a draft specification. Ms. Tanner mentioned that WaterSense will consider organizing small group discussions to resolve issues as they come up. WaterSense is also interested in talking with facility managers about potential problems they foresee, as well as speak to manufactures about how some of these issues might be addressed.

Kevin Ernst (OS&B) explained that in Canada, CSA B125.3 standard is used for flushometer valve toilets. The standard tests to a maximum of 6 Lpf, which means it can also verify the 4.8 Lpf WaterSense criteria. Mr. Ernst would like to know if the flushometer-valve toilet specification will also reference the B125.3 standard. Mark Malatesta (American Standard) clarified that portions of CSA B125.3 will be harmonized into the ASSE 1037 standard. The tri-harmonized standard should be completed before the WaterSense specification is completed. Ms. Tanner explained that the WaterSense specification should reference the 1037 standard.

Len Swatkowski suggested adding a caveat to the specification to account for older buildings. He explained that renovations to older commercial structures using high-efficiency plumbing products should be assessed by a qualified plumbing engineer to determine if these structures can accommodate lower-flow devices in the sanitary system. Ms. Tanner explained that WaterSense does not generally caveat specifications for retrofit versus new construction, but that WaterSense does provide information to facility managers in [*at Work: Best Management Practices for Commercial and Institutional Facilities*](#) about the proper way to use the specification.

Daniel Gleiberman (Sloan Valve Co.) asked if there is a deadline for written comments. Ms. Tanner explained that there is not a deadline at this time, but encouraged stakeholders to submit comments by the end of October or early November to ensure that comments have full consideration.

Ms. Tanner adjourned the meeting and provided a summary of next steps. She asked for written comment submission as soon as possible and explained that WaterSense will be getting back to stakeholders to discuss specific issues. A copy of any written comments received will be made available once WaterSense moves forward with the draft specification. Stakeholders will then have another opportunity to comment on the draft specification.